Do deployment experience and mental health status affect reasons for leaving military service?

Navy and Marine Corps Combat & Operational Stress Conference 2010:
"Taking Action, Measuring Results"

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Background

- **Retention of service members during high tempo operations and deployments is of great importance**
- **Military service may impact and shape attitudes toward military experience and influence early separation**
- **A 1997 GAO report documented “quality of life” issues as a potential cause for early separation among enlistees**
- **Hoge et al. showed personnel screening positive for mental health problems post-deployment were significantly more likely to leave military service**

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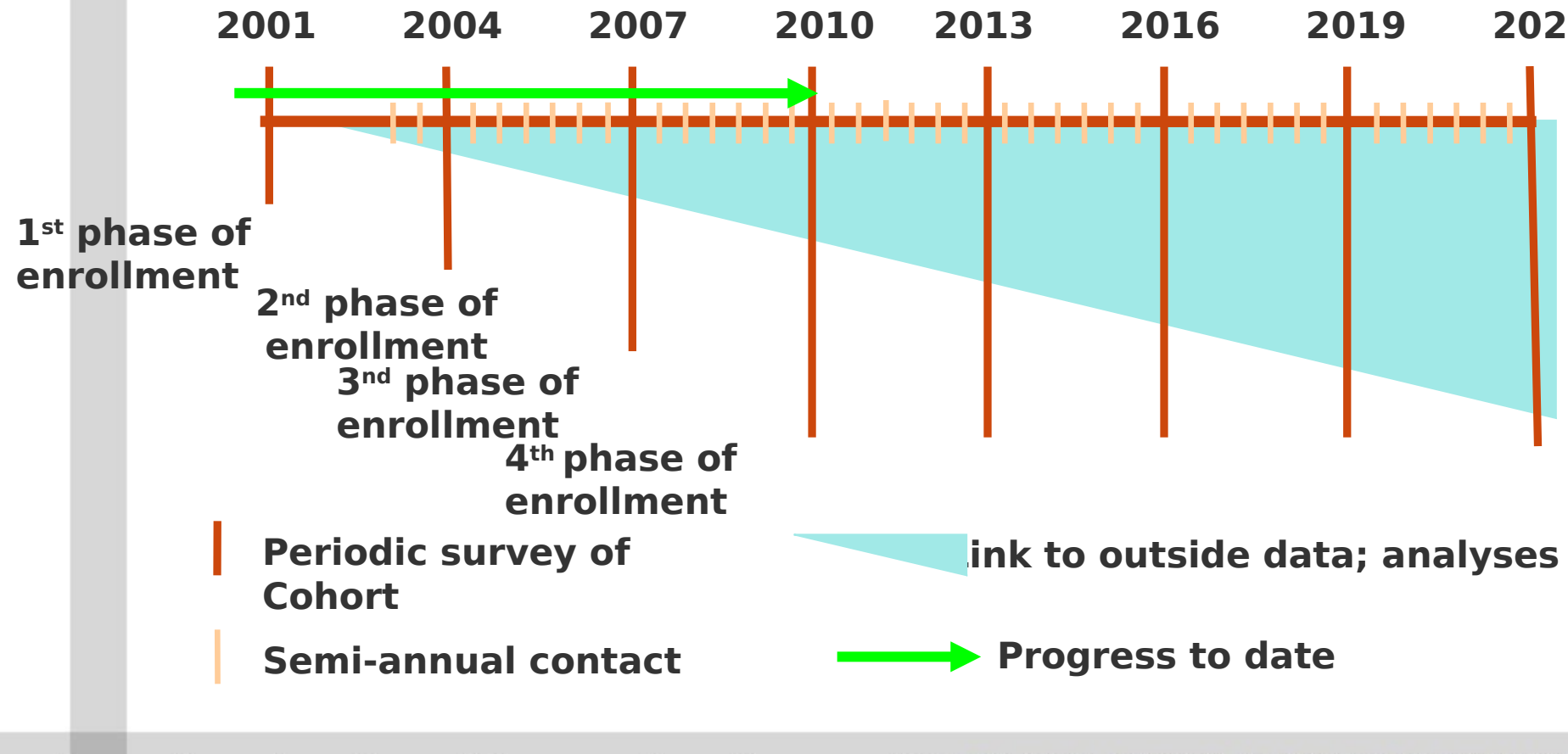
The Millennium Cohort Stu

MILLENNIUM COHORT STUDY

- 21-year longitudinal study launched prior to the wars in Iraq and Afghanistan
- Designed to examine and evaluate long-term health effects associated with military service, including deployment
- Stratified random sample of all US service personnel on duty in Oct 2000 invited to participate
- In 2004 and 2007, newer service members of the US military were enrolled
- Participants are re-surveyed every 3 years through 2022

The Millennium Cohort Study

MILLENNIUM COHORT STUDY



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Objectives

- **To investigate reasons for leaving service among Millennium Cohort participants who self-reported no longer serving in the military**
- **To determine if mental health conditions and deployment are associated with reasons for leaving military service**

Methods

- **Study Population**
  - **Millennium Cohort Study participants who reported being separated from the military in the 2007-2008 survey (N = 26,047)**
    - **Are you currently serving in the military (Active duty, Reserve, or National Guard)? (yes/no)**
- **Data Sources**
  - ***Millennium Cohort questionnaire*** **collected self-reported data on reasons for leaving military service, feelings towards military experience, service-related exposures, mental health, and behavioral characteristics**
  - ***Defense Manpower Data Center*** **provided data on deployment dates, and military and demographic characteristics**

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Outcomes: Reasons for leaving service

How much did each of the following reasons affect your decision to leave the military?	Not at all	A little bit	Moderately	Quite a bit	Extremely
a. Dissatisfaction with deployments and/or frequent moves	○	○	○	○	○
b. Military service created hardship for family	○	○	○	○	○
c. Dissatisfaction with promotion, pay, or other benefits	○	○	○	○	○
d. Dissatisfaction with job or leadership/supervision	○	○	○	○	○
e. Desire to continue your education, start a new career, or change in personal goals	○	○	○	○	○
f. Disability or other medical reasons	○	○	○	○	○
g. Difficulty meeting weight standards and/or fitness standards	○	○	○	○	○
h. Incompatibility with the military	○	○	○	○	○
i. Legal problems or problems meeting a military obligation	○	○	○	○	○
j. Fulfilled term of service or was retirement eligible	○	○	○	○	○

Exposures of interest

- Deployment (nondeployed vs. deployed)
- Mental health disorder symptoms
  - Depression (Patient Health Questionnaire, PHQ)
  - Panic or other anxiety syndrome (PHQ)
  - Post traumatic stress disorder (PTSD Checklist-Civilian version, PCL-C)

	Prior to 2007	2007
None	☐	☐
New-onset	☐	☑

Statistical analyses

- Univariate analyses using chi-square tests for associations
- Model diagnostics to examine collinearity, confounding, and effect modification
- Multivariable logistic regression was used to compare the adjusted odds of association for reasons for leaving service with deployment and with symptoms of mental health disorders

Covariates

Demographic

* Sex
* Birth year
* Education
* Marital status
* Race/ethnicity

Behavioral/other

* Body mass index
* Smoking status
* Alcohol dependence (CAGE)
* History of life stress
* Functional health (SF-36V)

Occupational

* Service-related exposure
* Length of service
* Military rank
* Service component
* Occupation
* Overall feelings towards military service

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Results

- **Of the 26,047 who reported separation:**
  - **Over 80% reported "Somewhat positive/Positive" feeling towards military service**
  - **25% had deployed in support of the current operations in Iraq or Afghanistan**
  - **New-onset mental health disorder symptoms**

Mental health disorder symptoms	Separated n = 26,047 %	Non-separated n = 40,021 %
PTSD	5.4	3.7
Panic or other anxiety syndrome	4.4	2.8
Major depression	4.3	2.7

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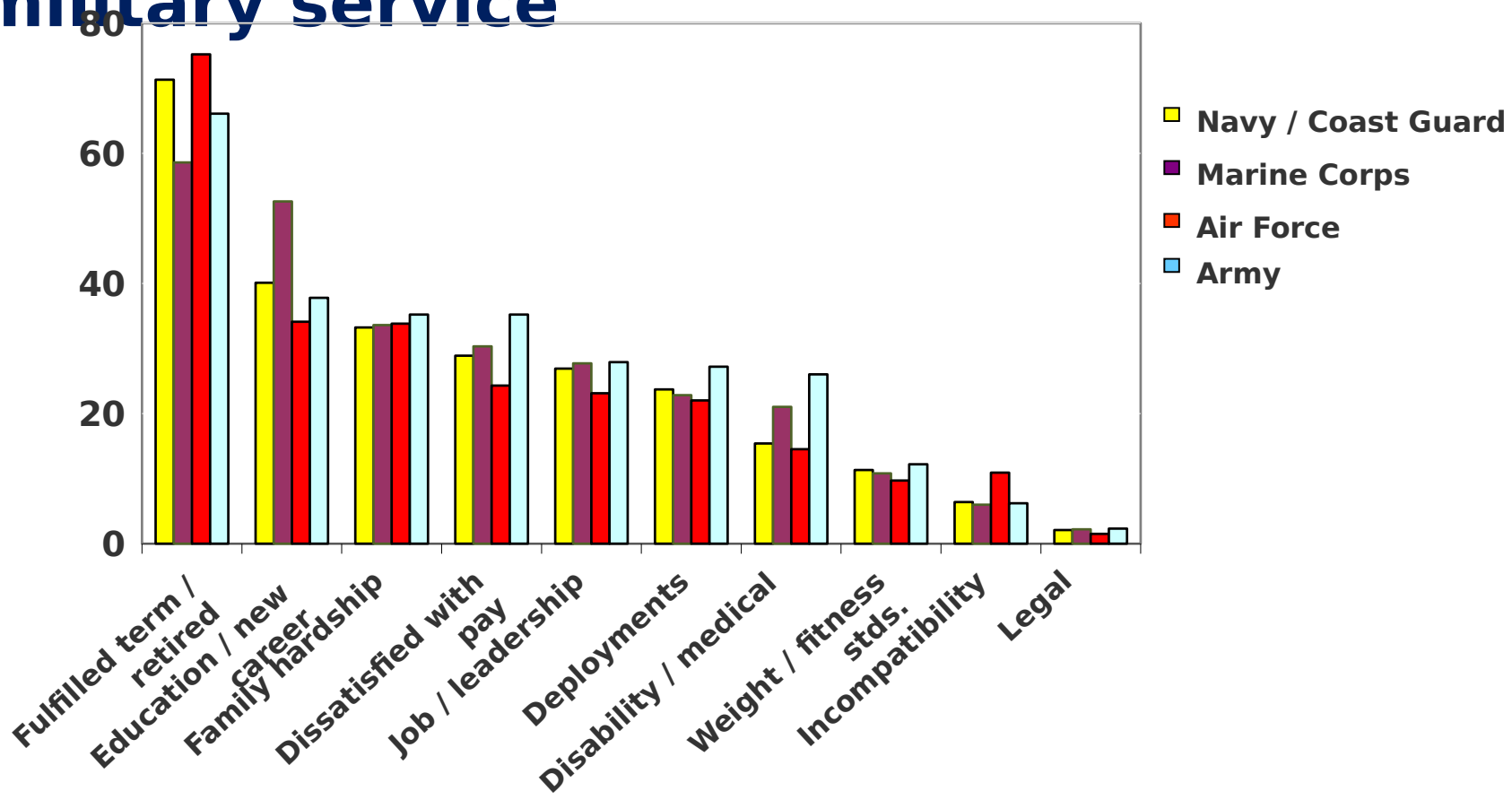
Results

- **Compared with those still in service, greater proportions of separated personnel had the following characteristics:**
  - **Marine Corps**
  - **Enlisted**
  - **No longer married**
  - **Bachelor's degree/some college**
  - **History of major life stress**
  - **History of alcohol dependence**
  - **Symptoms of PTSD, anxiety/panic syndrome, or depression**
  - **Lowest 15% mental and physical component summary scores**

Reasons that had moderate or greater influence in decision to leave military service



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Adjusted odds of reasons for leaving service by characteristics among Navy personnel

Characteristics	Disability or medical reasons OR (95% CI)	Military service created family hardship OR (95% CI)	Dissatisfaction with job or leadership / supervision OR (95% CI)	Dissatisfaction with deployment / frequent moves OR (95% CI)
Deployment status				
Nondeployed	ref	ref	ref	ref
Deployed	0.65 (0.50-0.86)	1.23 (1.03-1.47)	1.43 (1.19-1.71)	1.45 (1.21-1.74)
New-onset mental disorder				
No	ref	ref	ref	ref
Yes	3.16 (2.33-4.28)	1.23 (0.93-1.63)	1.43 (1.08-1.91)	0.96 (0.71-1.31)
Sex				
Male	ref	ref	ref	ref
Female	1.43 (1.14-1.80)	1.04 (0.88-1.24)	0.96 (0.80-1.14)	0.78 (0.65-0.94)
Birth year				
Pre-1960	ref	ref	ref	ref
1960-1969	0.77 (0.59-1.01)	1.92 (1.57-2.34)	1.29 (1.06-1.58)	2.09 (1.68-2.59)
1970-1979	0.63 (0.40-0.99)	2.95 (2.10-4.13)	1.75 (1.25-2.46)	2.83 (1.96-4.09)
1980 and forward	0.49 (0.27-0.88)	3.55 (2.29-5.49)	1.63 (1.05-2.54)	2.90 (1.82-4.62)

*Models also adjusted for race/ethnicity, marital status, education, functional health, smoking status, BMI, alcohol dependence, history of life stress, overall feelings for military service, pay grade, service component, and occupation

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Adjusted odds of reasons for leaving service by characteristics among Marine Corps personnel

Characteristics	Disability or medical reasons OR (95% CI)	Military service created family hardship OR (95% CI)	Dissatisfaction with job or leadership / supervision OR (95% CI)	Dissatisfaction with deployment / frequent moves OR (95% CI)
Deployment status				
Nondeployed	ref	ref	ref	ref
Deployed	0.76 (0.52-1.09)	2.14 (1.62-2.82)	1.15 (0.86-1.53)	1.79 (1.33-2.41)
New-onset mental disorder				
No	ref	ref	ref	ref
Yes	2.35 (1.52-3.64)	0.95 (0.93-1.63)	1.53 (1.03-2.26)	0.73 (0.47-1.13)
Sex				
Male	ref	ref	ref	ref
Female	2.33 (1.49-3.64)	0.87 (0.59-1.28)	0.91 (0.62-1.33)	1.10 (0.72-1.67)
Birth year				
Pre-1960	ref	ref	ref	ref
1960-1969	0.86 (0.47-1.55)	3.24 (1.82-5.76)	2.27 (1.21-4.26)	5.02 (2.56-9.87)
1970-1979	0.42 (0.16-1.13)	3.78 (1.54-9.27)	1.95 (0.74-5.12)	4.07 (1.46-11.3)
1980 and forward	0.44 (0.15-1.33)	4.07 (1.53-10.9)	1.91 (0.67-5.39)	4.83 (1.60-14.6)

*Models also adjusted for race/ethnicity, marital status, education, functional health, smoking status, BMI, alcohol dependence, history of life stress, overall feelings for military service, pay grade, service component, and occupation

Limitations and strengths

- **Reliance of self-reported data**
  - **Self-report may better represent symptom prevalence and current status of separation**
- **Standardized instruments used in place of physician diagnosis**
  - **Previous validation studies found instruments to be reliable**
- **Ability to report specific reasons for leaving service differentiated by service branch, and deployment and mental health status**
- **Extensive survey data collected allowed for simultaneous statistical adjustment for potential confounders**

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Conclusions

- **Majority of separated personnel reported somewhat positive or positive feelings towards their military experience and left service due to fulfillment of service term or retirement**
- **Factors associated with an individual's decision to leave the military were slightly different based on deployment experience or the development of mental health symptoms during service**
- **Analyses are on-going**

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Recommendations

- **Further investigation of subgroups with high incidence of separation not due to retirement/fulfillment of service term**
- **Findings from this study may be used to better understand the reasons reported for separation among personnel of the current operations**
- **These data may help provide guidance for military leadership to increase service retention**

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